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ABSTRACT

Validity of the Ohio Vocational Education Achievement Test Program (OVEATP) was studied by determining the correlation between test scores and job placement rates, job success rates, wages, and curriculum content. Performance on the 2 tests in the OVEATP--a general ability test and 1 of 25 occupational tests--was found to be moderately correlated. The correlation between test scores and job success, as measured by employers' ratings, was nonexistent. A positive correlation was found between results of four trade tests and wages. A comparison of a sample of OVEATP occupational/task/activity analyses for certain tests with related West Virginia competency-based curriculums (CBC) showed a lack of correspondence, which suggested the OVEATP is not testing what is being taught. A survey administered to vocational technical center directors, teachers, and employers showed that directors perceived the OVEATP more positively than did teachers. (Seventeen pages of data tables with survey results shown on questionnaire forms are provided.) Appendixes, amounting to approximately one-half of the report, include the National Center for Research in Vocational Education study of the relationship between test performance and post-high school experiences. Those results are summarized in the report and the comparison of the OVEATP and West Virginia CBC is also included. (YLB)

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ED221684

ANALYSIS OF THE

OHIO OCCUPATIONAL ACHIEVEMENT TESTS

Project No. BVTAE-76-WV-80-R-3

Presented to

The Bureau of Vocational, Technical and Adult Education
West Virginia Department of Education
Charleston, WV

by

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CE 033 711

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I. INTRODUCTION

The Ohio Vocational Education Achievement Test Program (OVEATP) is an extensive set of tests administered annually in the spring to eleventh and twelfth graders at participating schools. Each student must take two tests; a general ability (intelligence) test, and one of 25 different occupational tests. The tests include 14 trade and industrial occupations, three in health, two in agriculture, three in business and office, two in distribution, and one in home economics. The Program began with a few occupational tests in 1958 and has grown in both the diversity of trade tests offered and test usage. Individual state and local school norms are provided by the publisher, Instructional Materials Laboratory of Ohio State University. The various trade tests are based on occupational analysis or course outlines prepared for use in Ohio and each test produces several subtest scores as well as a total score. The general ability test and an occupational test can take from 270-390 minutes over two or three sessions to administer. The rental and scoring of the tests cost more than $1.50 per student, which does not include the cost of the administration.

Psychometrically speaking, little is known or published concerning the reliability and validity of the occupational tests (Buros, 1978). Further, the tests are not even available for review by independent researchers (OVEATP, 1979).

II. STATEMENT OF THE PROBLEM

The OVEATP is an expensive program that has not been studied extensively in West Virginia (or in any state other than Ohio). The usefulness of this Program must be demonstrated so as to obtain the best use of educational money and manpower for West Virginians. The relationships between test scores; placement and job success rates; curriculum content; and how well they are being used can establish the validity of the Ohio Test Program.

III. OBJECTIVES TO BE MET

As a part of this project the following specific objectives are studied:

A. The correlation between general ability test scores (Short Form Test of Academic Aptitude) and occupational achievement test scores is determined by program.

B. The correlation between occupational achievement test scores and job success (job performance measure by employer) for each program is determined.

C. The correlation between occupational achievement test results and job placement rate by program is determined.

D. The correlation between occupational achievement test results and wages is determined.

E. The relationship between the test and curriculum content by program is evaluated. Specifically, subtest names of each test are compared to similarly named curriculum titles.

F. A survey, administered to a sample of Vocational Technical Center

Directors, Teachers, and Employers, determine how and for what purposes test results are used.

Objectives A thru D were studied by The National Center for Research in Vocational Education and the results appear in draft form in Appendix A. Objectives E and F were studied by this researcher and are discussed in greater detail in the next section.

IV. FINDINGS

In this section results are related to specific objectives.

A. Performance on the Short Form Test of Academic Ability (SFTAA) is moderately correlated with combined trade tests, r = + .45. The range is .33 for clerk stenographer to .60 for construction electricity. While there is no logical reason to doubt that general intelligence, as measured by the SFTAA, is related to the performance of a variety of occupations it appears that those moderately high correlations may be inappropriate and that a general factor, i.e., reading ability, may be inordinately influencing the relationships, thus reducing the usefulness of the test results.

B. The correlation between occupational achievement test scores and job success, as measured by employers ratings, for combined trade tests is non-existent. Most correlations of test performance, whether SFTAA or a specific trade test, and various other demographics, ratings, and educational and employment outcomes, are in the .00 to .30 range. While some of these correlations are statistically significant, their practical signifiance is small.

Practical significance equals r^2 times 100%. If A and B correlate ($r = .30$) and is statistically significant at $p \leq .05$, then its practical significance is r^2 X 100% or 9%. Thus, 9% of the changes in A can be accounted for by changes in B, and the reflexive of this.

There may be a problem with some of the data reported in Appendix A. Many of the variables are discontinuous and therefore the use of the Pearson product-moment correlation coefficient is inappropriate, if indeed it was used. A more appropriate statistic for most of these data is the point-biserial (r_{pbi}). The r_{pbi} is rarely comparable numerically with a Pearson r when computed from the same data (Guilford and Fruchter, 1978).

The one significant correlation between an employer rating and the SFTAA is a -.32. This can be interpreted that as SFTAA scores increase there is a slight tendency for employers to rate the preparation of employees lower. Or, another interpretation is that as the employer rating of employee preparation increases the SFTAA score decreases. None of employer ratings correlated significantly with the values of all trade tests combined. The above results question the usefulness of the OVEATP to predict or even show a relationship to on-the-job performance ratings.

C. This objective is not addressed by the data presented in Appendix A.

D. The correlation between occupational achievement test results and wages is determined. For clerk stenographer, wages and the

trade test correlate +.32. For health occupations, wages and the trade test correlate +.50. For carpentry, wages and the trade test correlate +.49. For automobile mechanics, wages and the SFTAA correlate +.34. Of the remaining seven tests, three show no significant correlations between test scores and wages, and the other four had sample sizes too small to ascertain any relationship.

These obtained correlations are interesting but the results found are for only a few of the tests studied.

E. The relationship between the test and curriculum content by program is evaluated and specifically, subtest names of each test are compared to similarly named curriculum titles.

In order to discern the relationships between a particular OVEATP trade test and corresponding West Virginia CBC, one can not simply read a test item and decide what competency is being measured. This is because a particular test item may be construed to measure one or more competencies. Therefore, one can not reliably determine what competency is being measured by a specific test item. Also no OVEATP trade tests are available for review or evaluation.

To circumvent the above difficulties a ten percent (10%) sample of the OVEATP occupational/task/activity analyses for certain tests was drawn and compared to related West Virginia competency based curriculums. The occupational/task/activity analyses are used to write test items. Thus, it is possible

to compare certain analyses, used to develop trade tests and related CBC.

Table I shows the number of competencies and/or tasks in the OVEATP and West Virginia CBC. Most of them differ markedly in the number of competencies and/or tasks. Table 2 shows the amount of overlap for the tests and curriculums. (The technique used to generate these data is found in Appendix B.) Five of the seven comparisons show a 50% or less overlap in what is being tested by the OVEATP and what is being taught by the West Virginia CBC. This lack of correspondence suggests that the OVEATP is not testing what is being taught in the CBC. Therefore, the trade tests may not measure what has been learned.

F. A survey, administered to a sample of Vocational Technical Center Directors, Teachers and Employers, determines how and for what purposes test results are used. Table 3 defines the sample data. All Voc-Tech directors were sent the materials in Appendix C. A random sample, representing approximately 6% of all Voc-Tech teachers listed in the Vocational Educational Directory, 1978-79, stratified by teaching specialization, was mailed the materials in Appendix C.

TABLE 1

THE OHIO VOCATIONAL EDUCATION ACHIEVEMENT TEST PROGRAM
AND WEST VIRGINIA COMPETENCY BASED CURRICULUM

OCCUPATIONAL ANALYSIS	WEST VIRGINIA CBC
Accounting and Computing Clerks (23)	Accounting I (56)
Auto Body Mechanics Occupations (55)	Auto Body Repair (63)
Carpentry (51)	Building Construction (71)
Dental Assisting (110)	Dental Assistant (150)
Drafting Occupations (50)	Drafting (73)
Medical Assistant (199)	Nursing Assistant (118)
Welding Occupations (32)	Welding (85)

NOTE: The number in parenthesis () is the number of tasks and/or competencies presented.

TABLE 2

COMPARISON OF THE OVEATP
AND WEST VIRGINIA CBC

OCCUPATIONAL ANALYSIS	WVCBC	% OVERLAP
Accounting and Computing Clerks	Accounting I	50
Auto Body Mechanics Occupations	Auto Body Repair	33
Carpentry	Building Construction	60
Dental Assisting	Dental Assistant	95
Drafting Occupations	Drafting	40
Medical Assistant	Nursing Assistant	21
Welding Occupations	Welding	2

Average Percentage = 43%

TABLE 3

SAMPLE DATA

GROUP	POPULATION	SAMPLE	%
Voc-Tech Directors	52	52	100.
Voc-Tech Teachers	1653	98	5.93
Personnel Directors	178	100	56.2

The Bureau supplied this researcher with a list of employers who were known to have Voc-Tech graduates. Over 50% of these randomly selected employers were sent materials found in Appendix D.

Table 4 shows the questionnaire response rates to be well above the often found 15% level for all three groups surveyed.

Questionnaire response data for Voc-Tech directors are reported in Table 5. Generally the directors state: (1) that they use the OVEATP results in a number of ways; (2) that the tests measure student knowledge well and should be continued; (3) that employers usually do not use the results; (4) that West Virginia CBC are used and rated highly; (5) and that West Virginia CBC help students do better on the OVEATP than those students without CBC.

Table 6 shows response data for Voc-Tech teachers. Teachers, generally: (1) do use the results; (2) feel that the tests measure the knowledge of their students and should be continued; (3) that employers do not use the results; (4) slightly more than 50% use West Virginia CBC and rate them highly; (5) and that West Virginia CBC taught students do better on the OVEATP than those taught by another method.

Table 7 compares the responses of Voc-Tech directors and teachers. A major discrepancy occurs on item 6. Teachers do not perceive test results as assisting in supervision but directors do. Teachers do not feel that the tests measure the knowledge of students to the same degree as do directors and teachers do not use test results as much as directors.

TABLE 4

RESPONSE DATA

GROUP	SENT	RETURNED	%
Voc-Tech Directors	52	27	51.9
Voc-Tech Teachers	98	25	25.5
Personnel Directors	100	28	28.0

TABLE 5

RESPONSES OF

VOC-TECH DIRECTORS

(Percentages in Parenthesis)

OHIO OCCUPATIONAL ACHIEVEMENT TEST PROGRAM

USAGE QUESTIONNAIRE

Your Personnel Classification: (Check as many as needed.)

27 (100) 1. Director of Center.

_____ 2. Classroom Teacher.

_____ 3. Title of area of specialization.

INSTRUCTIONS:

If you are a Director of a Vocational-Technical Center please respond to these questions in a manner that reflects personal knowledge of the way your teachers generally and actually use the test results.

If you are a classroom teacher please respond in the way that you actually use the test results.

Thank you.

Table 5 (Continued)

1. Results help determine if the objectives of instruction have been achieved. (Check one)

16 (76.2) 1. Yes 5 (23.8) 2. No

2. Results provide a basis for reviewing the curriculum and improving instruction. (Check one)

19 (90.5) 1. Yes 2 (9.5) 2. No

3. Results help identify strengths and weaknesses of the student. (Check one)

18 (85.7) 1. Yes 3 (14.3) 2. No

4. Results provide motivation for students and teachers. (Check one)

13 (76.5) 1. Yes 4 (23.5) 2. No

5. Results identify facility and equipment deficiencies. (Check one)

7 (38.9) 1. Yes 11 (61.1) 2. No

6. Results assist in the process of supervision. (Check one)

13 (65.0) 1. Yes 7 (35.0) 2. No

7. Results help identify strengths and weaknesses of the instruction. (Check one)

17 (80.9) 1. Yes 4 (19.1) 2. No

8. Results help evaluate reference material. (Check one)

8 (42.1) 1. Yes 11 (57.9) 2. No

9. How well do you feel the Ohio Occupational Achievement Test Program measures the knowledge of students in your classes? (Check appropriate description)

Extremely Well	Well	Average	Poorly	Extremely Poorly	Have No Opinion
2 (7.4) 1.	7(25.9) 2.	8 (29.6) 3.	2 (7.4) 4.	----- 5.	8 (70.3) 6.

Table 5 (Continued)

10. How do you use the test results of the Ohio Occupational Achievement Test Program? (Check as many as needed)

15 (55.6)* 1. Evaluate students. *Percentages total more than 100 because of multiple responses.

18 (6.7) 2. Evaluate instruction.

4 (14.8) 3. Include results of students in reference letters to prospective employers.

1 (3.7) 4. Do not use.

6 (22.2) 5. Other. Please explain.

11. How do you think prospective employers of your students use the results of the Ohio Occupational Achievement Test Program? (Check as many as needed)

1 (3.7) 1. In the "hire" or "not hire" decision.

------ 2. To set starting wages.

2 (7.4) 3. To compare applicants.

1 (3.7) 4. To evaluate vocational training.

23 (85.2) 5. Do not use.

------ 6. Other. Please explain.

12. In your opinion, should West Virginia continue to administer the Ohio Occupational Achievement Test Program? (Check one)

14 (73.7) 1. Yes 5 (26.3) 2. No

13. If you answered No to Question #12, what program of student evaluation should be implemented? Please explain.

14. Which of the following Ohio Occupational Achievement Tests have your students taken in the past? (Check as many as needed)

9 1. Auto Body Mechanic
16 2. Automotive Mechanic
17 3. Carpentry

Table 5 (Continued)

2	4.	Cosmetology
13	5.	Construction Electricity
7	6.	Communication Products Electronics
7	7.	Industrial Electronics
13	8.	Drafting
13	9.	Machine Trades
4	10.	Lithographic Printing (Graphic Arts)
3	11.	Sheet Metal
16	12.	Welding
1	13.	Dental Assisting
7	14.	Medical Assisting
6	15.	Diversified Health Occupations
6	16.	Heating, Air Conditioning and Refrigeration
4	17.	Nursery School Teacher Aide
2	18.	Food Marketing
11	19.	Clerk Stenographer
1	20.	Horticulture
1	21.	Commercial Art
5	22.	General Merchandising
11	23.	General Office Clerk
8	24.	Accounting - Computing
4	25.	Agri-Business

15. Do you use competency-based curriculums in your class instruction? (Check one)

20 (83.3) 1. Yes 4 (16.7) 2. No

16. If you answered No to Question #15, why do you not? (Check one)

_____ 1. Not available in my subject area.

_____ 2. Materials available are not very good

_____ 3. Do not like the competency-based curriculum approaches as a teaching method.

3 (75.0) 4. Other. Please explain.

17. If you answered Yes to Question #15, from what source do you obtain competency-based manuals? (Check as many as needed)

20 (100) 1. West Virginia produced Vocational Curriculum Manuals.

13 (65.0) 2. Vocational Curriculum Manuals from other states.

10 (50.0) 3. Own materials.

1 (5.0) 4. Other. Please explain.

*Percentages total more than 100 because of multiple responses.

18. Overall, how do you rate the West Virginia competency-based curriculum manuals that you use? (Check one)

Very Good	Good	Average	Poor	Very Poor	Do Not Use
6 (27.3) 1.	15 (68.2) 2.	1 (4.5) 3.	-- 4.	-- 5.	-- 6.

19. In your opinion, students taught by an instructor using West Virginia competency-based curriculum manuals perform on the Ohio Occupational Achievement Test Program _____. (Check one)

4 (21.1) 1. The same as those taught by another method.

7 (36.8) 2. Better than those taught by another method.

_____ 3. Not as well as those taught by another method.

8 (42.1) 4. Have no opinion.

20. Which of the following West Virginia produced curriculum manuals do you use as your major source for instruction? (Check as many as needed)

14 Nursing Assistant
3 Tool Sharpening & Fitting
8 Basic Skills in Oxyacetylene Welding, Cutting & Brazing
4 Tractor Mechanic
4 Gardener and Landscape Worker
5 Nursery & Greenhouse Worker
4 Agribusiness Management
3 Floriculture
6 Accounting I
6 Typing I
5 Accounting II
5 Shorthand II
4 Legal Secretary
5 Word Processing
4 Data Processing
2 Hotel/Motel Operations
5 Cashier-Checker
2 Real Estate Agent
10 Adult Roles & Functions
3 Occupational Clothing
4 Home Management
4 Child Care
3 Adult Programs in Consumer & Homemaking Education
8 Business & Office
3 Construction
- Manufacturing
- Health
3 Agribusiness/Natural Resources
5 Home Economics
6 Distributive Education
1 Guidance
- Firefighter
- Wastewater Treatment
12 Welding
9 Machine Shop
7 Masonry
5 Custodial Services
3 Mine Machine Electrician
7 Auto Body Repair
3 Surveying
3 Mapping
9 Automechanics
2 Upgrading Mine Electricians in the Use of Solid State Electrical Controls
10 Drafting
12 Building Construction
4 Common Competencies
2 West Virginia Placement Program Manual
1 Do You Read Me? -
1 Industrial Supplement
1 Environmental Supplement
2 Business & Office Supplement

TABLE 6

RESPONSES OF

VOC-TECH TEACHERS

(Percentages in Parenthesis)

OHIO OCCUPATIONAL ACHIEVEMENT TEST PROGRAM

USAGE QUESTIONNAIRE

Your Personnel Classification: (Check as many as needed.)

_____ 1. Director of Center.

25 (100) 2. Classroom Teacher.

_____ 3. Title of area of specialization.

INSTRUCTIONS:

If you are a Director of a Vocational-Technical Center please respond to these questions in a manner that reflects personal knowledge of the way your teachers generally and actually use the test results.

If you are a classroom teacher please respond in the way that you actually use the test results.

Thank you.

Table 6 (Continued)

1. Results help determine if the objectives of instruction have been achieved. (Check one)

   10 (76.9) 1. Yes 3 (23.1) 2. No

2. Results provide a basis for reviewing the curriculum and improving instruction. (Check one)

   9 (69.2) 1. Yes 4 (30.8) 2. No

3. Results help identify strengths and weaknesses of the student. (Check one)

   9 (75.) 1. Yes 3 (25.) 2. No

4. Results provide motivation for students and teachers. (Check one)

   9 (69.2) 1. Yes 4 (30.8) 2. No

5. Results identify facility and equipment deficiencies. (Check one)

   3 (23.1) 1. Yes 10 (76.9) 2. No

6. Results assist in the process of supervision. (Check one)

   4 (30.8) 1. Yes 9 (69.2) 2. No

7. Results help identify strengths and weaknesses of the instruction. (Check one)

   8 (61.5) 1. Yes 5 (38.5) 2. No

8. Results help evaluate reference material. (Check one)

   4 (33.3) 1. Yes 8 (66.7) 2. No

9. How well do you feel the Ohio Occupational Achievement Test Program measures the knowledge of students in your classes? (Check appropriate description)

Extremely Well	Well	Average	Poorly	Extremely Poorly	Have No Opinion
1.	3 (12.0) 2.	4 (16.0) 3.	2 (8.0) 4.	2 (8.0) 5.	14 (56.0) 6.

Table 5 (Continued)

10. How do you use the test results of the Ohio Occupational Achievement Test Program? (Check as many as needed)

3 (12.0)	1.	Evaluate students.
6 (2..0)	2.	Evaluate instruction.
- (0.0)	3.	Include results of students in reference letters to prospective employers.
15 (60.0)	4.	Do not use.
1 (4.0)	5.	Other. Please explain.

11. How do you think prospective employers of your students use the results of the Ohio Occupational Achievement Test Program? (Check as many as needed)

- (0.0)	1.	In the "hire" or "not hire" decision.
- (0.0)	2.	To set starting wages.
1 (4.0)	3.	To compare applicants.
1 (4.0)	4.	To evaluate vocational training.
22 (88.0)	5.	Do not use.
1 (4.0)	6.	Other. Please explain.

12. In your opinion, should West Virginia continue to administer the Ohio Occupational Achievement Test Program? (Check one)

6 (60.0) 1. Yes 4 (40.0) 2. No

13. If you answered No to Question #12, what program of student evaluation should be implemented? Please explain.

14. Which of the following Ohio Occupational Achievement Tests have your students taken in the past? (Check as many as needed)

2	1.	Auto Body Mechanic
4	2.	Automotive Mechanic
1	3.	Carpentry

Table 6 (Continued)

-	4.	Cosmetology
2	5.	Construction Electricity
2	6.	Communication Products Electronics
2	7.	Industrial Electronics
1	8.	Drafting
1	9.	Machine Trades
1	10.	Lithographic Printing (Graphic Arts)
1	11.	Sheet Metal
1	12.	Welding
1	13.	Dental Assisting
1	14.	Medical Assisting
1	15.	Diversified Health Occupations
2	16.	Heating, Air Conditioning and Refrigeration
-	17.	Nursery School Teacher Aide
-	18.	Food Marketing
3	19.	Clerk Stenographer
-	20.	Horticulture
-	21.	Commercial Art
-	22.	General Merchandising
1	23.	General Office Clerk
2	24.	Accounting - Computing
1	25.	Agri-Business

15. Do you use competency-based curriculums in your class instruction? (Check one)

10 (55.6) 1. Yes 8 (44.4) 2. No

16. If you answered No to Question #15, why do you not? (Check one)

1 (12.5) 1. Not available in my subject area.

1 (12.5) 2. Materials available are not very good

6 (75.0) 3. Do not like the competency-based curriculum approaches as a teaching method.

------ 4. Other. Please explain.

17. If you answered Yes to Question #15, from what source do you obtain competency-based manuals? (Check as many as needed)

9 (90.0)* 1. West Virginia produced Vocational Curriculum Manuals.

2 (20.0) 2. Vocational Curriculum Manuals from other states.

7 (70.0) 3. Own materials.

2 (20.0) 4. Other. Please explain.

*** Percentages total more than 100 because of multiple responses.**

Table 6 (Continued)

18. Overall, how do you rate the West Virginia competency-based curriculum manuals that you use? (Check one)

Very Good	Good	Average	Poor	Very Poor	Do Not Use
3 (30.0) 1.	4 (40.0) 2.	1 (10.0) 3.	2 (20.0) 4.	-- 5.	-- 6.

19. In your opinion, students taught by an instructor using West Virginia competency-based curriculum manuals perform on the Ohio Occupational Achievement Test Program _____. (Check one)

1 (7.7) 1. The same as those taught by another method.

3 (23.1) 2. Better than those taught by another method.

---- 3. Not as well as those taught by another method.

9 (69.2) 4. Have no opinion.

20. Which of the following West Virginia produced curriculum manuals do you use as your major source for instruction? (Check as many as needed)

- Nursing Assistant
1 Tool Sharpening & Fitting
2 Basic Skills in Oxyacetylene Welding, Cutting & Brazing
- Tractor Mechanic
- Gardener and Landscape Worker
- Nursery & Greenhouse Worker
- Agribusiness Management
- Floriculture
2 Accounting I
2 Typing I
- Accounting II
- Shorthand II
- Legal Secretary
1 Word Processing
1 Data Processing
- Hotel/Motel Operations
- Cashier-Checker
- Real Estate Agent
1 Adult Roles & Functions
- Occupational Clothing
1 Home Management
- Child Care
- Adult Programs in Consumer & Homemaking Education
1 Business & Office
- Construction
- Manufacturing
- Health
- Agribusiness/Natural Resources
1 Home Economics
- Distributive Education
- Guidance
- Firefighter
- Wastewater Treatment
1 Welding
- Machine Shop
- Masonry
- Custodial Services
-- Mine Machine Electrician
2 Auto Body Repair
- Surveying
- Mapping
3 Automechanics
1 Upgrading Mine Electricians in the Use of Solid State Electrical Controls
1 Drafting
- Building Construction
- Common Competencies
- West Virginia Placement Program Manual
- Do You Read Me? -
- Industrial Supplement
- Environmental Supplement
- Business & Office Supplement

TABLE 7

COMPARISON OF RESPONSES OF

VOC-TECH DIRECTORS AND TEACHERS FROM USAGE QUESTIONNAIRE
(Percentages are Reported)

QUESTION		DIRECTORS	TEACHERS
1.	1.	76.2	76.9
	2.	23.8	23.1
2.	1.	90.5	69.2
	2.	9.5	30.8
3.	1.	85.7	75.0
	2.	14.3	25.0
4.	1.	76.5	69.2
	2.	23.5	30.8
5.	1.	38.9	23.1
	2.	61.1	76.9
6.	1.	65.0	30.8
	2.	35.0	69.2
7.	1.	80.9	61.5
	2.	19.1	38.5
8.	1.	42.1	33.3
	2.	57.9	67.7
9.	1.	7.4	----
	2.	25.9	12.0
	3.	29.6	16.0
	4.	7.4	8.0
	5.	----	8.0
	6.	70.3	56.0
10.	1.	55.6*	12.0*
	2.	66.7	24.0
	3.	14.8	----
	4.	3.7	60.0
	5.	22.2	4.0

*Percentages total more than 100 because of multiple responses.

Table 7 (Continued)

QUESTION		DIRECTORS	TEACHERS
11.	1.	3.7	----
	2.	----	----
	3.	7.4	4.0
	4.	3.7	4.0
	5.	85.2	88.0
	6.	----	4.0
12.	1.	73.7	60.0
	2.	26.3	40.0
15.	1.	83.3	55.6
	2.	16.7	44.4
16.	1.	----	12.5
	2.	----	12.5
	3.	----	75.0
	4.	100.0	----
17.	1.	100.0*	90.0*
	2.	65.0	20.0
	3.	50.0	70.0
	4.	5.0	20.0
18.	1.	27.3	30.0
	2.	68.2	40.0
	3.	4.5	10.0
	4.	----	20.0
	5.	----	----
	6.	----	----
19.	1.	21.1	7.7
	2.	36.8	23.1
	3.	----	----
	4.	42.1	69.2

*Percentages total more than 100 because of multiple responses.

Teachers are not as committed as directors to continue the OVEATP. Teachers do not use CBC as much as directors perceive them to do and teachers do not rate West Virginia CBC as highly as directors do.

Except for the instances cited, teachers and directors responded to questions in the same direction but not necessarily to the same degree.

The responses of personnel directors in Table 8 show that personnel directors do not know about the OVEATP and were never given results of the tests. Therefore, they could not use the data in any personnel decisions.

V. DISCUSSION AND CONCLUSIONS

The preliminary psychometric data in Appendix A raise serious questions as to what the OVEATP is related and its validity. The SFTAA, a general ability (intelligence) test, correlated statistically with almost as many variables as did the specific trade tests. Further, the SFTAA correlated moderately to moderately high with all eleven individual trades. These findings do not make the case that each individual trade test is measuring a set of unique and separate functions, different from the SFTAA.

Given the direct cost of the OVEATP and the indirect, but very expensive administration costs, one might require stronger psychometric data before continuing in this program. While evaluation of any program is important the use of an expensive and doubtful instrument is not the answer.

The data showing the relationship between the occupational/task/activity analysis and West Virginia CBC suggest that the OVEATP is

TABLE 8

RESPONSES OF

PERSONNEL DIRECTORS

Please check as many of the following statements as may be needed to describe your actual usage of the Ohio Occupational Achievement Test Program results. Thank you.

24 (85.7)	1.	I do not know about the Program.
8 (28.6)	2.	Results were never given to me.
--	3.	In the "hire" or "not hire" decision.
--	4.	To set starting wages.
--	5.	To compare applicants.
--	6.	To evaluate vocational training.
3 (10.7)	7.	Do not use.
1 (3.6)	8.	Other. Please explain.

*Percentages total more than 100 because of multiple responses.

not measuring to any great extent what is being taught in CBC classrooms.

The questionnaire data show that Voc-Tech center directors perceive the OVEATP and CBC more positively than do Voc-Tech teachers. The personnel directors of Voc-Tech graduates do not even know of the OVEATP, much less use the results in any way.

The continued use of the OVEATP in West Virginia, given the data in this report, must be considered carefully.

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APPENDIX A

STUDY BY THE NATIONAL CENTER FOR RESEARCH IN VOCATIONAL EDUCATION

CORRELATIONAL ANALYSIS

This chapter examines the relationship between performance on the Ohio Occupational Achievement Tests and measures of post-high school experiences. The data were collected by educational agencies of the State of West Virginia. The tests were administered to students in the spring of 1979 to seniors throughout the state. Placement data were collected from schools approximately six months after graduation from all counties, and follow-up surveys of former students were conducted in eleven counties. The students in these eleven counties were asked if they were employed in jobs which were related to their training. If they were, they were asked to report the names and addresses of their employers. Employers who were reported were sent mail questionnaires and asked to rate the preparation and performance of the former students.

Unfortunately, the long chain between the initial testing of students and the final collection of employer ratings resulted in much missing data. When the test data were matched with placement data, a total of 3,235 valid matches were obtained. Student follow-up questionnaires, however, were available for only 388 (12 percent) of the full matched sample and there were only thirty-five employer questionnaires. These thirty-five employers represent one percent of the full sample, nine percent of the student follow-ups, and thirty-three percent of the 104 former students who reported they were employed in jobs directly or closely related to their training.

Obviously when these thirty-five employers were divided across the twenty-five trade tests that were administered, there were very few employers for each test. Even the 388 student follow-ups did not provide adequate numbers to allow statistical analysis of some of the separate trade tests. Table 1 reports the number of usable responses for each of the major types of data for each of the trade tests.

A correlation coefficient can be calculated for as few as two pairs of responses, if there is some variability in the measures. As a general rule, however, it is usually recommended that at least thirty pairs of observations be available. If this criterion had been adopted, only one of the trade tests, the clerk stenographer test, would have had sufficient follow-up data for analysis. Accordingly, a more liberal criterion of ten or more observations was adopted. The summary statistics for the test which met, or nearly met, this criterion are reported in Table 2.

Limitations. The low number of usable follow-up responses for the separate trade tests is a major limitation of the present analysis. The correlations presented in this chapter should be considered only suggestive of possible relationships. Additional analyses with responses from at least one hundred former students for each test would be needed before firmer conclusions can be drawn.

Some Preliminary Indications

With this caveat in mind, what do the results suggest?

1. Performance on the Short Form Test of Academic Ability

TABLE 1

Usable Responses by Trade Test

Trade Test	Placement Data	Follow-up Data		
		Wage Rates	Student Ratings	Employer Ratings
Auto body mechanic	146	15	18	1
Automotive mechanic	346	29	44	3
Carpentry	336	19	37	3
Cosmetology	12	-	-	-
Construction electricity	203	9	16	2
Comm. products electronics	74	2	9	2
Industrial electronics	31	1	6	-
Drafting	167	3	11	-
Machine trades	140	15	26	2
Lithographic printing	35	3	4	1
Sheet metal	20	-	-	-
Welding	338	17	31	5
Dental assisting	41	-	-	-
Medical assisting	73	-	2	-
Divers. health occup.	271	12	47	5
Heating, AC., refrig.	59	8	9	-
Nursery school aide	98	3	6	1
Food marketing	15	-	-	-
Clerk stenographer	314	32	79	8
Horticulture	31	2	6	-
Commercial art	26	-	-	-
Gen. merchandising	148	4	13	-
Gen. office clerk	147	8	13	-
Accounting - comput.	153	2	11	1
Agri. business	10	-	-	-
All trades	3234	184	388	34

TABLE 2

Summary Statistics for Selected Variables

Variables	All Tests	Auto Body	Auto Mechs.	Carp-entry	Elec-tricity	Mach. Trades	Weld-ing	Health
Personal Characteristics								
Sex (% male)	60	90	97	96	97	97	96	7
Ethnicity (% caucasian)	97	97	99	93	96	96	98	96
Disadvantaged (%)	4	5	7	7	4	2	5	3
Educational Outcomes (%)								
Completed Program	89	95	90	91	93	94	88	97
Employed, training related[a]	51	47	55	49	40	45	42	50
Employed, unrelated[a]	39	47	37	41	50	41	45	39
Current Student	35	19	26	33	31	19	21	43
Employment Outcomes								
Wages ($ hour)	3.98	4.69	4.21	4.16	b	4.81	4.99	3.23
Time employed (months)	3.9	6.1	6.0	6.0	4.2	4.1	2.9	4.3
Student Ratings (% Yes)								
Adequate	85	100	86	86	50	93	75	81
Teaching methods	96	100	95	100	64	100	100	100
Helpful Obtaining Job	81	80	70	75	70	88	83	97
Additional education related	67	b	60	33	b	b	b	94

a Calculated only for respondents in the labor force, employed or seeking employment, as reported in school placement data.

b Number respondents less than 10; statistic not reported.

Table 2 Continued

Summary Statistics for Selected Variables

Variables	Heat AC Refrig.	Clerk Steno	Gen. Mach.	Gen. Office
Personal Characteristics				
Sex	95	6	30	3
Ethnicity	95	98	95	100
Disadvantaged	3	3	5	2
Educational Outcomes				
Completed Program	95	86	91	67
Employed, training related	43	72	70	50
Employed, unrelated	51	20	16	37
Current student	8	59	29	19
Employment Outcomes				
Wages	b	3.21	b	b
Time employed	b	5.1	b	b
Student Ratings				
Adequate	b	84	85	100
Teaching methods	b	100	93	100
Helpful Obtaining Job	b	89	b	58
Additional education related	b	76	b	b

(SFTAA) test was highly correlated with performance on the trade tests.

For all the trade tests combined the correlation was $r = .45$. For the separate trade tests these correlations ranged from a high of .60, for construction electricity, to a low of .33 for clerk stenographer. All of these correlations are significant at less than the .01 probability level.

The means and rank order of the means for the separate tests are presented in Table 3. The rank order of the SFTAA means seems to agree with conventional judgments about the academic ability of students in the various occupational areas. In general, however, the rank or means on the trade tests do not correspond to the ranks on the SFTAA test. These discrepancies reflect the differences in the number of items on the tests, the complexity of the subject matter in the various occupations and the corresponding difficulty of the tests used to measure mastery of that subject matter. The trade tests are not of equal length or difficult, therefore, comparisons across them are not appropriate.

2. There are more significant correlations between test results and follow-up variables than would be expected by chance.

Table 4 summarizes the correlations between the trade tests and thirteen selected variables, ten of which are placement and follow-up variables. (The actual correlations are presented in Table A to W for the eleven trade tests with sufficient follow-up data for analysis.) If there were no systematic relationships

Table 3

Mean and Rank of Mean SFTAA and Trade Tests

Trade Test	SFTAA Mean	SFTAA Rank	Trade Mean	Trade Rank
Auto body	47.11	22	139.69	13
Auto mechanics	49.65	19	134.77	17
Carpentry	47.67	20	120.61	21
Cosmetology	50.33	14	196.17	1
Construction Electricity	51.51	11	111.12	24
Communication	58.65	2	140.78	12
Industrial Electronics	58.58	3	120.94	20
Draftery	55.69	5	114.97	23
Machine Trade	47.66	21	125.61	18
Graphic Arts	54.71	7	115.74	22
Sheet Metals	41.45	25	91.20	25
Welding	47.08	23	135.17	15
Dental Assistant	50.07	15	141.83	11
Medical Assistant	53.96	8	124.29	19
Health Occupation	51.30	13	161.64	4
Heating, AC, Refrigeration	49.22	18	145.66	10
Nursery School Aide	44.15	24	157.14	6
Food Marketing	51.40	12	139.47	14
Clerk Stenographer	55.61	6	148.70	8
Horticulture	49.39	17	134.90	16
Commercial Arts	57.73	4	161.62	5
General Merchandising	49.51	16	180.57	3
General Office Clerk	51.77	10	147.78	9
Accounting	60.58	1	180.61	2
Agri - Business	52.50	9	154.90	7

TABLE 4

Summary of Significant Coefficient = Selected Trade Tests and Variables

Variables	Trade Tests												Total			
	All	A	B	C	E	I	L	O	P	S	V	W	+	-	?+	?-
Personal Characteristics																
Sex	-		+	?+	+			?+					2	1	2	
Ethnicity	+			?+	?-		+ +	+	+	?+			5		2	1
Disadvantaged	+			+	?+	?+				?+			2		3	
Educational Outcomes																
Completed program			+	+	+			+			-	?-	4	1		1
Employed, training related	+			+				+	?+	+	+	+	6		1	
Employed, unrelated	+						?+			+	?+		2		2	
Current student				?-				+			-		2	1		1
Employment Outcomes																
Wages			?-	?+	+			+			+		3		1	1
Time employed							+				-		1	1		
Student Ratings																
Adequate	+															
Teaching methods	?+										+		2			
Helpful obtaining job		+		?+	+										1	
Additional education related		+			?-								2		1	
													1			1
Total																
+	7	2	3	3	2	1	4	3	2	3		1	31			
-	1									3				4		
?+	1		3	2	1		2	1	2	1					13	
?-		1		3								1				5

Notes:

Selected Trade Tests

All = Scores from all tests combined and intercorrelated with selected variables

A = Auto body mechanic

B = Automotive mechanic

C = Carpentry

E = Construction electricity

I = Machine trades

L = Welding

O = Diversified Health Occupation

P = Heating, Air conditioning, Refrigeration

S = Clerk Stenographer

V = General Merchandising

W = General Office Clerk

(These are the identifying letters assigned to these tests by Ohio State University)

Symbols

\+ = Positive correlation coefficient significant at .05 probability level or less

\- = Negative correlation coefficient significant at .05 level or less probability

?+ = Positive correlation coefficient at a probability level of .06 to .10

?- = Negative correlation coefficient at a probability level of .06 to .10

between test performance and follow-up measures, six statistically significant correlations would be expected by chance. (Ten variables times twelve tests equals 120 correlations. One hundred and twenty times a .05 probability level equals six significant correlations.) Twenty-two correlations were found to be significant at the .05 level and an additional six were in .06 to .10 range.

3. The largest number of statistically significant correlations was found for respondents who reported they were employed in training related jobs.

This is a relationship that would be expected. It indicates a tendency for high scores on the tests to be associated with employment in jobs that were related to training. Statistically significant relationships, however, were not found for all the tests. The correlations were significant for five of them--carpentry; welding; heating, air conditioning, refrigeration; clerk stenographer and general office clerk--as well as for all the trade tests combined.

In general, then, the significant correlations that were obtained were in the expected direction and there were far more than would be expected by chance. There does seem to be a tendency for performance on the tests to be associated with measures of post-high school experience. Before any more definitive statements can be made about any of the separate trade tests, more adequate follow-up information will be necessary. The remainder of the chapter presents the analyses of the separate trade tests and discusses the procedure used in the analysis.

Details of the Analysis

The statistically significant correlations summarized in Table 4 were obtained from analysis of the separate trade tests. To conduct these analyses it was necessary to have all the variables in a form that was suitable for intercorrelation. All of the categorical variables, such as sex, race, ethnicity, and program completion, were converted to dichotomous variables with one category assigned a value of one and the other a value of zero. Table 5 lists all of the variables to which such values were assigned.

A few of the variables were continuous, or nearly so. Wage rate per hour was a true continuous variable and the employer ratings were on five point scales. These were entered directly into the intercorrelations. Pearson product-moment correlations were calculated separately for each of the eleven trade tests for which there were adequate placement and follow-up data and for all the trade tests combined.

It was noted above that comparisons of the means of different trade tests was inappropriate because of their differences in difficulty and total possible scores. This is not a problem in correlational analysis, however, because the actual test scores are converted to standardized scores as part of the calculations. Standardized scores can be compared across different measures.

Table 6 reports the intercorrelations for all the trade tests for which there were placement or follow-up data. The

TABLE 5

Values Assigned Variables
for Intercorrelational Analysis

Variables	Assigned Values
Personal Characteristics	
Sex	Male = 1, Female = 0
Ethnicity	Caucasian = 1, All other = 0
Disadvantaged	Nondisadvantaged = 1, Disadvantaged = 0
Educational Outcomes	
Completed Program	Completer = 1, Noncompleter = 0
Employed, training related	Training related = 1, Unemployed = 0
Employed, unrelated	Unrelated = 1, Unemployed = 0
Current Student	Current student = 1, Nonstudent = 0
Employment Outcomes	
Wages	Actual wages
Time employed	Less than 1 mo. = 1, 2-4 = 2, 4-6 = 3, 6+ = 4
Student Ratings	
Adequate	Yes = 1, No = 0
Teaching methods	Yes = 1, No = 0
Helpful obtaining job	Yes = 1, No = 0
Additional education related	Yes = 1, No = 0
Employer Ratings	
Knowledge	Very poor = 1, Poor = 2, Neutral = 3, Good = 4, Very good = 5
Attitudes	
Work quality	
Overall	
Relative preparation	Less prepared = 1, About the same = 3, Better prepared = 5

first thing that should be noted is the dramatic drop in the number of paired observations ("n") on which the correlations are based. The personal characteristic coefficients are based on all or virtually all the valid matches between the test and placement data. When this many observations are available, even fairly low degrees of relationships are statistically significant at the .05 probablility level. As the number of observations decreases, stronger relationships are needed to reach significance.

Table 6 indicates that females (who were assigned the value "0" for intercorrelations) tended to have higher scores on both the SFTAA and trade tests. Nonminorities and nondisadvantaged students also tended to score higher. Higher scores on the aptitude and trade tests were associated with being employed in training-related and unrelated jobs.* Higher scores on the trade tests only were associated with the former students reporting their training had prepared them for and helped them to obtain their jobs.

Overall, test scores were not associated with employer ratings except for relative preparation. On this variable employers were found to rate students who scored higher on the aptitude test as less prepared but students who scored higher on the trade tests as better prepared. Since the aptitude and trade tests are

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* These correlations were calculated by comparing former students who were reported by their schools to be in related or unrelated employment to former students who were unemployed.

TABLE 6

All Trade Tests Combined

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.45	.00	3235			
Personal Characteristics						
Sex	-.07	.00	3235	-.25	.00	3235
Ethnicity	.05	.00	3235	.05	.00	3235
Disadvantaged	.11	.00	3149	.07	.00	3149
Educational Outcomes						
Completed program	-.07	.00	3235	.02	.11	3235
Employed, training related	.10	.00	1140	.15	.00	1140
Employed, unrelated	.06	.04	911	.06	.04	911
Current student	.14	.00	446	.01	.42	446
Employment Outcomes						
Wages	-.06	.22	184	.01	.46	184
Time employed	.06	.18	229	.01	.41	229
Student Ratings						
Adequate	-.02	.34	388	.13	.00	388
Teaching methods	-.06	.11	352	.07	.09	352
Helpful obtaining job	.02	.37	315	.13	.01	315
Additional education related	-.01	.45	115	.17	.04	115
Employer Ratings						
Knowledge	.15	.21	34	.09	.31	34
Attitudes	-.08	.32	34	-.17	.17	34
Work quality	.11	.27	34	.07	.34	34
Overall	.18	.15	35	.03	.42	35
Relative preparation	-.32	.04	27	.28	.08	27

themselves highly intercorrelated, this finding was quite unexpected. The number of observations on which these correlations are based is quite small. Nevertheless, the opposite nature of these correlations suggest that knowledge of trades, as reflected by these test scores, has an effect on employer satisfaction quite independent of the students' academic aptitude.

Tables A through W present the same correlations as in Table 6 for the eleven trade tests for which adequate placement and follow-up data were available.* None of these tables have correlations with employer ratings for none of the separate tests had ten or more matched employer questionnaires.

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* The letters used to designate these tables are those assigned to the trade tests by Ohio State University and are the same used to label these tests in Table 4.

TABLE A

Auto Body Mechanic

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.59	.00	146			
Personal Characteristics						
Sex	.16	.03	146	.24	.00	146
Ethnicity	-.04	.32	146	.02	.39	146
Disadvantaged	.02	.42	142	.10	.11	142
Educational Outcomes						
Completed program	.12	.08	146	.16	.03	146
Employed, training related	-.00	.49	51	-.01	.46	51
Employed, unrelated	-.11	.23	51	-.15	.15	51
Current student	-.12	.31	21	-.25	.14	21
Employment Outcomes						
Wages	-.08	.38	15	-.36	.09	15
Time employed	.48	.03	17	.30	.12	17
Student Ratings						
Adequate		a			a	
Teaching methods		a			a	
Helpful obtaining job	.21	.23	15	.31	.13	15
Additional education related		b			b	

a Impossible to calculate correlation, all respondents gave a yes response.

b Number of respondents less than 10, correlation not reported.

TABLE B

Automobile Mechanics

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.50	.00	346			
Personal Characteristics						
Sex	.01	.42	346	.08	.07	346
Ethnicity	.13	.01	346	.08	.08	346
Disadvantaged	.15	.00	336	.17	.00	336
Educational Outcomes						
Completed program	.07	.08	346	.18	.00	346
Employed, training related	.12	.07	143	.14	.05	143
Employed, unrelated	.04	.35	101	.02	.41	101
Current student	.14	.17	46	.09	.28	46
Employment Outcomes						
Wages	.34	.04	29	.28	.07	29
Time employed	-.33	.03	31	-.10	.30	31
Student Ratings						
Adequate	-.36	.01	44	-.01	.48	44
Teaching methods	.02	.44	41	-.04	.41	41
Helpful obtaining job	-.16	.18	37	-.08	.33	37
Additional education related	-.72	.01	10	-.01	.48	10

TABLE C

Carpentry

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.43	.00	336			
Personal Characteristics						
Sex	.10	.03	336	.18	.00	336
Ethnicity	.00	.50	336	-.07	.09	336
Disadvantaged	.16	.00	331	.09	.06	331
Educational Outcomes						
Completed program	-.01	.40	336	.16	.00	336
Employed, training related	.10	.12	129	.08	.19	129
Employed, unrelated	.12	.11	113	.03	.36	113
Current student	.25	.05	46	-.21	.08	46
Employment Outcomes						
Wages	-.25	.15	19	.49	.02	19
Time employed	.23	.14	25	.05	.41	25
Student Ratings						
Adequate Teaching methods	.21	.11	37	.06	.36	37
Helpful obtaining job		a			a	
Additional education related	.10	.29	32	.26	.07	32
	-.00	.50	11	-.46	.08	11

a Impossible to calculate correlation, all respondents gave a yes response.

TABLE E

Construction Electricity

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.60	.00	203			
Personal Characteristics						
Sex	-.06	.22	203	.02	.41	203
Ethnicity	.11	.07	203	.13	.04	203
Disadvantaged	.12	.05	195	.10	.08	195
Educational Outcomes						
Completed program	.03	.33	203	.04	.30	203
Employed, training related	-.05	.36	57	.01	.49	57
Employed, unrelated	-.15	.11	68	-.08	.26	68
Current student	-.03	.46	16	.24	.18	16
Employment Outcomes						
Wages		b			b	
Time employed	.13	.36	10	-.23	.26	10
Student Ratings						
Adequate						
Teaching methods	-.36	.08	16	.15	.29	16
Helpful obtaining job	-.16	.29	14	.25	.20	14
Additional education related	.08	.40	13	.48	.05	13
		b			b	

b Number of respondents less than 10, correlation not reported.

TABLE I

Machine Trades

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.47	.00	140			
Personal Characteristics						
Sex	-.03	.38	140	.06	.23	140
Ethnicity	.06	.25	140	.14	.05	140
Disadvantaged	-.06	.25	137	.08	.16	137
Educational Outcomes						
Completed program	.03	.34	140	.10	.12	140
Employed, training related	.05	.36	57	.13	.17	57
Employed, unrelated	.05	.36	53	.08	.29	53
Current student	.35	.04	27	.08	.34	27
Employment Outcomes						
Wages	-.05	.44	15	-.14	.31	15
Time employed	-.00	.50	18	-.01	.48	18
Student Ratings						
Adequate Teaching methods	.11	.30 a	26	.12	.28 a	.26
Helpful obtaining job Additional education related	-.14	.25 b	25	-.09	.33 b	25

a Impossible to calculate correlation, all respondents gave a yes response.

b Number of respondents less than 10, correlation not reported.

TABLE L

Welding

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.53	.00	338			
Personal Characteristics						
Sex	.05	.18	338	.09	.06	338
Ethnicity	.09	.05	338	.09	.04	338
Disadvantaged	.08	.07	326	.07	.11	326
Educational Outcomes						
Completed program	.07	.10	338	.13	.01	338
Employed, training related	.10	.12	132	.15	.04	132
Employed, unrelated	.10	.12	140	.12	.08	140
Current student	-.11	.24	47	-.17	.12	47
Employment Outcomes						
Wages	-.20	.22	17	.02	.48	17
Time employed	.03	.44	25	.34	.05	25
Student Ratings						
Adequate	-.00	.50	31	.12	.26	31
Teaching methods		a			a	
Helpful obtaining job	.00	.49	23	.13	.28	23
Additional education related		b			b	

a Impossible to calculate correlation, all respondents gave a yes response.

b Number of respondents less than 10, correlation not reported.

TABLE O

Health Occupations

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.57	.00	271			
Personal Characteristics						
Sex	.04	.26	271	.07	.12	271
Ethnicity	-.01	.40	271	.11	.04	271
Disadvantaged	.10	.05	256	.04	.24	256
Educational Outcomes						
Completed program	-.04	.26	271	.07	.13	271
Employed, training related	.05	.35	68	.19	.06	68
Employed, unrelated	.06	.34	56	.14	.15	56
Current student	.36	.00	54	.44	.00	54
Employment Outcomes						
Wages	.38	.11	12	.50	.05	12
Time employed	.52	.01	22	-.12	.30	22
Student Ratings						
Adequate Teaching methods	-.17	.13	47	-.14	.17	47
Helpful obtaining job	-.09	.31	34	.13	.24	34
Additional education related	.35	.09	17	.16	.27	17

a Impossible to calculate correlation, all respondents gave a yes response.

TABLE P

Heating, Air Conditioning, Refrigeration

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.45	.00	59			
Personal Characteristics						
Sex	.20	.07	59	.08	.29	59
Ethnicity	.10	.23	59	.17	.10	59
Disadvantaged	.24	.03	59	.17	.10	59
Educational Outcomes						
Completed program	-.18	.08	59	-.03	.40	59
Employed, training related	.40	.05	18	.46	.03	18
Employed, unrelated	.57	.00	21	.40	.04	21
Current student	-.11	.37	12	.15	.32	12
Employment Outcomes						
Wages		b			b	
Time employed		b			b	
Student Ratings						
Adequate		a			a	
Teaching methods		a			a	
Helpful obtaining job		b			b	
Additional education related		a			a	

a Impossible to calculate correlation, all respondents gave a yes response.

b Number of respondents less than 10, correlation not reported.

TABLE S

Clerk Stenographer

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.51	.00	314			
Personal Characteristics						
Sex	.08	.08	314	.04	.25	314
Ethnicity	.04	.24	314	.06	.15	314
Disadvantaged	-.00	.50	303	-.03	.29	303
Educational Outcomes						
Completed program	-.20	.00	314	-.10	.03	314
Employed, training related	.14	.07	122	.18	.02	122
Employed, unrelated	.27	.04	43	.23	.07	43
Current student	.00	.49	83	-.18	.05	83
Employment Outcomes						
Wages	.18	.16	32	.32	.04	32
Time employed	-.22	.11	35	-.32	.03	35
Student Ratings						
Adequate	.23	.02	79	.41	.00	79
Teaching methods		a			a	
Helpful obtaining job	-.00	.49	62	-.00	.49	62
Additional education related	.08	.32	34	.11	.27	34

a Impossible to calculate correlation, all respondents gave a yes response.

TABLE V

General Merchandising

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.40	.00	148			
Personal Characteristics						
Sex	.11	.10	148	-.02	.43	148
Ethnicity	.05	.28	148	.10	.12	148
Disadvantaged	.12	.08	147	.06	.25	147
Educational Outcomes						
Completed program	.07	.20	148	.01	.45	148
Employed, training related	-.06	.32	68	.11	.19	68
Employed, unrelated	.19	.19	24	.24	.13	24
Current student	-.22	.19	17	.08	.38	17
Employment Outcomes						
Wages		b			b	
Time employed		b			b	
Student Ratings						
Adequate	.42	.07	13	.12	.34	13
Teaching methods	.16	.30	13	.08	.40	13
Helpful obtaining job		b			b	
Additional education related		b			b	

b Number of respondents less than 10, correlation not reported.

TABLE W

General Office Clerk

Intercorrelation Test Scores
with Selected Variables

Variables	SFTAA TOTAL			TRADE TOTAL		
	r	p	n	r	p	n
SFTAA with Trade Total	.33	.00	147			
Personal Characteristics						
Sex	-.10	.13	147	-.05	.29	147
Ethnicity		a			a	
Disadvantaged	.13	.07	138	.03	.38	138
Educational Outcomes						
Completed program	-.13	.06	147	-.13	.06	147
Employed, training related	.10	.23	56	.31	.01	56
Employed, unrelated	-.10	.27	44	.19	.11	44
Current student	.07	.39	16	.07	.40	16
Employment Outcomes						
Wages		b			b	
Time employed		b			b	
Student Ratings						
Adequate		a			a	
Teaching methods		a			a	
Helpful obtaining job	-.02	.48	12	-.19	.28	12
Additional education related		b			b	

a Impossible to calculate correlation, all respondents gave a yes response.

b Number of respondents less than 10, correlation not reported.

APPENDIX B

COMPARISON OF THE OVEATP AND WEST VIRGINIA CBC

EXPLANATION OF COMPARISON TECHNIQUE

From each OVEATP occupational/task/activity analysis a ten per cent (10%) sample of items is randomly selected. Then each selected item is compared to all the competencies in a related West Virginia CBC. If an analysis corresponds to a competency, then a "match" is scored. Matches divided by the number of items sampled equals a score, or overlap, or correspondence. Actual data follows.

ACCOUNTING AND COMPUTING CLERK

SAMPLE: 2 Items. Numbers 21 and 15.

1. Assisting with the preparation of financial schedules and statements - Page 16, 17 and 18, student proves ledger and prepares a financial statement by himself.

2. Verifying and adjusting inventories - inventories are not covered in the Accounting I course, maybe they are in Part II.

Score 50%

AUTO BODY MECHANICS OCCUPATIONS

SAMPLE: 6 Items. Numbers 3, 15, 16, 19, 22 and 23.

Score 33%

CARPENTRY

SAMPLE: 5 Items. Numbers 2, 26, 27, 30 and 33.

1. Erect batter boards - unit 3, section 1, page 39.
2. Install nailers - unit 3, section 6, page 47.
3. Layout rafters on top plate and ridge board - unit 3, section 8, page 51.
4. Layout gable end stoppings - nothing.
5. Install drip edge and flashing - nothing.

Score 60%

DENTAL ASSISTING

SAMPLE: 11 Items. Numbers 4, 10, 28, 34, 36, 61, 63, 78, 87, 88 and 91.

1. Item 10: Aid patient for cardiac arrest.
   Looked under Expanded Functions - nothing.
   Looked under General Chairside Procedure - nothing.
   But a chest message and mouth-to-mouth resuscitation.
   Looked under Administering First Aid - found Complete Cardiac Care.

2. Item 28: Prepare Self (Surgery)
   Found section for approved handwashing procedures in Basic Procedures. Didn't find anything on the aseptic rubber glove technique.

3. Item 34: Clean and Prepare X-Ray Tanks
   Found complete procedure in section-
   Performing X-Ray Procedures

4. Item 61: Pour a Plaster Diagnostic Model
   Found a complete section on page 257 or 293.

5. Item 91: Answer Emergency Telephone Calls
   Found complete section on page 9 with appointment control.

6. Item 36: Process X-Ray Film
   Found complete section on page 57 or 275.

7. Item 88: Explain to Scheduled Patients Unexpected Delay
   Covered in section on receiving patients and visitors on page 23.

8. Item 4: Take Oral Temperature
   Nothing

9. Item 63: Prepare and Pour a Stone Work Model
   Found section on impressions on page 249

10. Item 78: Polish a Denture
    Found it with complete denture repairs on page 250.

11. Item 87: Complete Registration Form and Health History Record
    Found complete section on page 5.

Score 95%

DRAFTING OCCUPATIONS

SAMPLE: 5 Items. Numbers 9, 15, 20, 35, and 41.

1. Item 15: Organize and Draw Keys and Legends
   Looked under Basic Drafting
   Had a section on lettering and a section on sketching.
   Had sections on the different instruments and their use in the measurement scale.
   Looked under Architecture
   Found no section on just keys and legends.

2. Item 9: Select Sketch Size
   Have a section on freehand sketches and development sketches

3. Item 41: Determine Part Scale and Sheet Size
   Have section on scale (different types)
   Found nothing on sheet size

4. Item 35: Select Method of Detail
   Have section on industry and building standards

5. Item 20: Place Direction of Flow Arrows
   Have flow arrows discussed the section on architecture.

Score 40%

MEDICAL ASSISTANT

SAMPLE: 19 Items. Numbers 6, 14, 16, 18, 21, 23, 28, 42, 45, 50, 53, 59, 62, 63, 77, 79, 87, 92, and 99.

1. Screen non-patient visitors - nothing.

2. Prepare schedule for physician of hospital patients - nothing

3. Arrange travel accommodations - nothing

4. Transcribe from a dictating machine - nothing

5. Type a consultation letter - nothing

6. Compose and type collection letter - nothing

7. Inventory Office Supplies - nothing
Instruction manual has nothing about performing medical office management duties.

8. Obtain and record patient billing information for hospital visits by physicians - nothing

9. Complete employee tax related forms - nothing

10. Assemble information for accountant for tax returns - nothing
Instruction manual has nothing about completing business office duties.

11. Sterilize with chemicals - unit I section B
Clean instruments and supplies and unit VI section A

12. Autoclave surgical gloves - unit VI section B

13. Prepare and wrap glass syringes and needles - unit I section B

14. Autoclave syringes and needles - nothing

15. Apply elastic bandage - unit IV section D part I

16. Apply arm splint - nothing about splints

17. Position and drape patient for knee chest - nothing

18. Prepare a rectal tray - nothing

19. Assist with eye instillation - nothing

Score 21%

WELDING

SAMPLE: 3 Items. Numbers 23, 29 and 28.

1. TIG Weld Stainless Steel - nothing about welding with tungsten inert-gas.

2. Set up equipment for Metallic Inert-Gas Welding - nothing with metallic inert-gas welding.

3. MIG Carbon Steel - nothing.

Score 2%

APPENDIX C

QUESTIONNAIRE SENT TO VOC-TECH CENTER DIRECTORS AND TEACHERS

TAU ASSOCIATES
PROFESSIONAL SERVICES
P.O. Box 227
Fairmont, WV 26554

Dear Educator:

Enclosed is a questionnaire developed to determine how and for what purposes results of the Ohio Occupational Achievement Test Program are used. There are also a few items concerning the West Virginia competency-based curriculum manuals included. Your response to the items in this survey will assist the West Virginia Bureau of Vocational, Technical and Adult Education in evaluating the effectiveness of the tests and their usage in West Virginia. Your responses shall remain confidential and only a summary of a large number of questionnaires shall be reported to the Bureau.

Please take a moment to respond now, so that your busy schedule will not keep you from answering this important survey. Place your completed questionnaire in the enclosed self-addressed, stamped envelope and drop it in the mail.

Thank you for your assistance in this important project.

Sincerely,

William R. Thompson

APPENDIX D

QUESTIONNAIRE SENT TO PERSONNEL DIRECTORS

TAU ASSOCIATES

PROFESSIONAL SERVICES

P.O. Box 227
Fairmont, WV 26554

Dear Employer:

As an employer of a graduate from one of the West Virginia vocational-technical education programs you have been randomly selected to assist in the evaluation of the Ohio Occupational Achievement Test Program. The Ohio Occupational Achievement Test Program administers to a student one or more tests in 14 trade and industrial occupations, three in health, two in agriculture, three in business and office, two in distribution, and one in home economics. The results on these tests may help the teacher in evaluating the knowledge of his or her students and number of other questions.

The enclosed questionnaire is to determine if you as an employer are aware of these test results and how you actually use them, if at all. Your responses are confidential and only a summary of a large number of questionnaires shall be reported to the West Virginia Bureau of Vocational, Technical and Adult Education.

Please take a moment now to answer the questionnaire. Upon completion, drop the self-addressed, stamped post card into the mail.

Thank you for your assistance in this important project.

Sincerely,

William R. Thompson